

Wallops 6U Deployer Improvements

Completed Technology Project (2012 - 2013)



Project Introduction

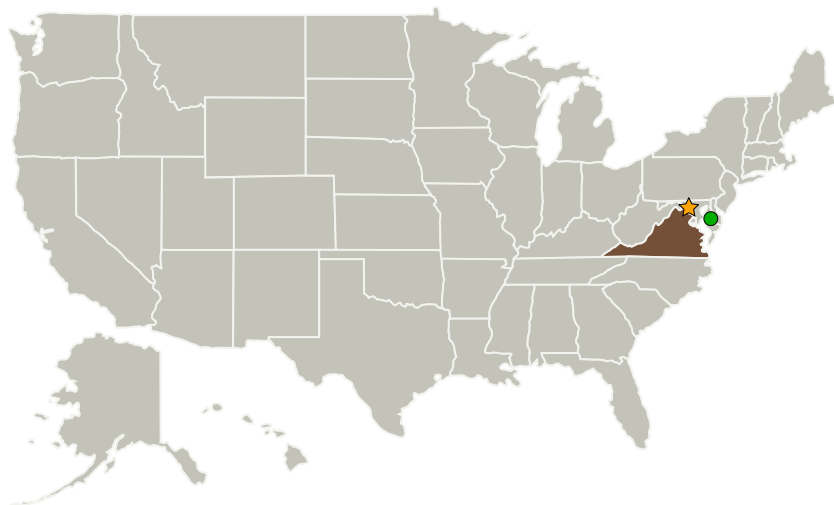
The current Wallops Flight Facility (WFF) 6U deployer has yielded innovation in the way CubeSat style satellites are being constrained. The concept has been proven through testing and is being considered in GSFC proposals. However, the design is in need of improvement to bring it to a level of performance and reliability that would put it in a class of its own. This effort looks to incorporate the needed improvements into the design and demonstrate them through testing.

The WFF 6U deployer will be improved in 11 key areas: 1. Mass & Joint Reduction 2. Two Stage Release 3. Door Orientation 4. Satellite Preload System Improvement 5. Sounding Rocket Fitment 6. Quick Disconnect 7. Launch Vehicle Interface Update 8. Deployment Verification System 9. Shear Pin Preload System Improvement 10. Deployment Spring Interface 11. Nitrogen Purge System Once the improvements have been incorporated into the design, detailed structural analysis will be completed to ensure survival under predicted environmental loading conditions. A qualification unit of the improved design will be manufactured and undergo functional, vibration, and thermal testing.

Anticipated Benefits

The improved deployer design will be qualified and ready to support funded NASA missions.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
● Wallops Flight Facility(WFF)	Supporting Organization	NASA Facility	Wallops Island, Virginia

Primary U.S. Work Locations

Virginia

Images

**11751-1360532861207.png**Wallops 6U Deployer Improvements
(<https://techport.nasa.gov/image/1639>)

Project Website:

<http://aetd.gsfc.nasa.gov/>

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

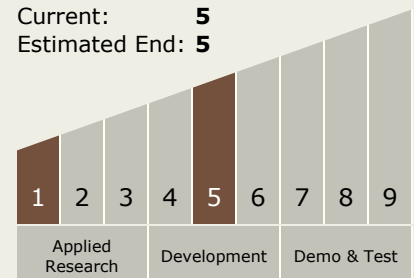
Project Manager:

Bruce E Underwood

Principal Investigator:

Luis H Santos Soto

Technology Maturity (TRL)

Start: **1**Current: **5**Estimated End: **5**

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Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
 - └ TX12.3 Mechanical Systems
 - └ TX12.3.1 Deployables, Docking, and Interfaces